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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/822,926

04/13/2004

Paul C. Gillette

10277

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7590

01/31/2007

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EXAMINER

WHITE, EVERETT NMN

ART UNIT

PAPER NUMBER

1623

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/822,926

Applicant(s)

GILLETTE ET AL.

Examiner

Everett White

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-96 is/are pending in the application.
- 4a) Of the above claim(s) 1-40, 47, 50, 52-55 and 67-93 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41-46, 48, 49, 51, 56-66 and 94-96 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/20/04 & 12/12/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election of Group III, Claims 41-98, and the election of carboxymethyl cellulose in the election of species requirement in the reply filed on January 15, 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Applicants indicated that Claims 41-50, 56-66 and 94-96 are readable upon the elected cellulosic species, carboxymethylcellulose. Claim 50 may have been intended to be Claim 51 since the etherifying agents disclosed in Claim 50 do not appear to result in the production of carboxymethylcellulose and since carboxymethylcellulose is cited in Claim 51. Also, it does not appear that the bases, amines and quaternary ammonium hydroxides, would be used to prepare carboxymethylcellulose. Hence, the art rejections are based on Claims 41-46, 48, 49, 51, 56-66 and 94-96 being readable upon the elected species.
3. Claims 47, 50, 52-55 and 67-93 are withdrawn from consideration as being readable upon non-elected species.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 63-65 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 63-65 disclose that the final product contains some fraction of the cellulose ether derivative. This limitation in Claims 63-65 lacks clear antecedent basis by being dependent from Claim 41 since Claim 41 does not disclose a process for

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making an ether derivative and some other ingredient or a composition containing the an ether derivative and some other component, which renders Claims 63-65 indefinite.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 41-46, 48, 49, 51, 56, 57, 63-66 and 94-96 are rejected under 35 U.S.C. 102(b) as being anticipated by Henry et al (US Patent No. 3,085,087).

Applicants claim a process for making an ether derivative comprising (a) mixing a composition comprising a loose mass of comminuted raw cotton linter fibers as the starting material with a base to form an activated cellulose mixture and, (b) reacting the activated cellulose mixture with at least one etherifying agent to form a cellulose ether derivative, wherein mixing power of the activated cellulose mixture is 5 % lower than the mixing power of the same process using comparably comminuted purified celluloses.

The Henry et al patent discloses in Example 1 a process for preparing carboxymethylcellulose that involve sodium hydroxide in water, a diluent, comminuted cellulose, monochloroacetic acid being combine to form a slurry to produce the cellulose product. The sodium hydroxide and monochloroacetic acid used in the example anticipate the base, sodium hydroxide, etherifying agent, metal salts of α -halogenoalkanoates, and monochloroacetic acid disclosed in instant Claims 41, 44-46, 48 and 49. See column 4, lines 6-9, wherein the diluent is a water-miscible aliphatic alcohol selected from a group that includes ethanol, n-propanol, isopropanol, n-butanol, and tert-butanol, which anticipate the organic diluents disclosed in instant Claims 94-96. The carboxymethyl cellulose produced in Example 1 anticipates the carboxymethylcellulose disclosed in instant Claim 51. The Henry et al patent discloses in column 5, 2nd paragraph, that even-though, normally, the final product is the alkali salt of the carboxyalkyl ether, Henry et al discloses that the free acid form may be obtained by well known means, e.g., by

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treating the salt with a mineral acid or an ion exchange resin process. Henry et al also discloses that the product may be further process by purifying and dehydrating, which comprises washing the product with a nonsolvent such as methanol, neutralizing the free alkali with acetic acid, draining off the liquid, washing the product again with anhydrous methanol, and finally air-drying the cellulose ether product (see column 4, lines 38-66). The further processing of the product disclosed in the Henry et al patent anticipate the subject matter of instant Claims 56 and 57. The Henry et al patent further teaches that the degree of substitution (D.S.) desired is determine by the amount of etherifying agent employed, which is generally about 0.01-3.0 parts of etherifying agent (based on monochloroacetic acid) per part of cellulose (see column 6, 2nd paragraph). The amount of etherifying agent disclosed in the Henry et al patent anticipates at least part of the degree of substitution range disclosed in instant Claim 66.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 58-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henry et al (US Patent No. 3,085,087) as applied to Claims 41-46, 48, 49, 51, 56, 57, 66 and 94-96 above, and further in view of Newbury et al (US Patent No. 6,069,355).

Applicants claim a process for making an ether derivative, wherein the process further comprises the viscosity of the starting material or cellulose ether derivative being reduced by chemical, mechanical, irradiation and enzymatic means.

The process for making an ether derivative described in the Henry et al patent in the above rejection is incorporated into the current rejection.

The instantly claimed process for making an ether derivative differs from the Henry et al patent by claiming a process that involve the viscosity of the starting material or cellulose ether derivative being reduced by chemical, mechanical, irradiation and enzymatic means.

The Newbury et al patent shows that the viscosity of cellulose raw material being reduce by irradiation, chemical treatment or enzymatic treatment is known in the art (see column 2, last line to column 3, line 4).

One of ordinary skill in this art would be motivated to combine the teachings of the Henry et al patent with the teachings of the Newbury et al patent since both documents disclose procedures for processing cellulose material.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to initially reduced the viscosity of the cellulose material as suggested in the Newbury et al patent before mixing the cellulose in a slurry for the preparation of an ether derivative in view of the recognition in the art, as evidenced by

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the Henry et al patent, cellulose material of low viscosity can more thoroughly be mixed in a slurry which increases the quality of the final product.

Summary

10. Claims 41-46, 48, 49, 51, 56-66 and 94-96 are rejected; Claims 47, 50, 52-55 and 67-93 are withdrawn from consideration as being readable upon non-elected species. Claims 1-40 are withdrawn from consideration as being drawn to non-elected inventions.

Examiner's Telephone Number, Fax Number, and Other Information

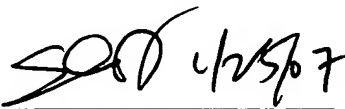
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is 571-272-0660. The examiner can normally be reached on 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



E. White



Shaojia A. Jiang
Supervisory Primary Examiner
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